City of Toronto.
Department of Public Health.

HISTORY OF WATER QUALITY AT THE TORONTO BEACHES.

November 8, 1983

CITY OF TORONTO
DEPARTMENT OF PUBLIC HEALTH

C.26

November 8, 1983

To: Metro Works Committee - Water Quality Subcommittee

Subject: History of Water Quality at the Toronto Beaches

Origin: Medical Officer of Health, November 8, 1983

Municipal Reference

Comments:

I hereby submit information on the history of water quality at the Toronto beaches. Figure 1 illustrates the geometric mean of boat testing from 1972 to 1982. With a few exceptions, this analysis shows relatively little change in water quality over that period. I think it is reasonable to conclude that there has been no general deterioration of water quality along the Lake Ontario waterfront.

The important exception has been at Sunnyside Beach, sampling points 9055 and 9057. In both these cases, there has been a steady increase in seasonal geometric mean for fecal coliform since 1978. To further illustrate this point, I have extracted from the Ministry of the Environment data, geometric means for the month of August at two sampling points on the western beaches. These are done on an arithmetic rather than a log scale, and show the changes in water quality more clearly (Figures 2 and 3).

Overall, then, there does not appear to be major deterioration in waterfront water quality, although a number of specific trouble spots exist.

One may well ask, if there is apparently no deterioration in overall water quality except at the western beaches, why were the beaches placarded this summer? The reason is, we now know more about our beaches. Table 1 displays results of shoreline sampling in early August, Table 2 displays results of fifteen feet offshore sampling on one beach. These are the data on which the decision to placard the beaches was based.

We continued our sampling program, both onshore and offshore. Table 3 displays the results of offshore testing for the month of August at three eastern beaches. These samples were taken by a health inspector walking in to chest depth, and reaching out with the sampling pole. They were performed in conformity with Ministry of the Environment criteria, i.e., in 1 - 1.5 metres of water, and 15 centimetres beneath the surface.

These results do not meet Ontario recreational water quality standards. Indeed, there are few jurisdictions in North America whose standards they would meet. It is important to note the high variability of the results. Some days the water is almost good enough to drink, while other days it is highly contaminated. The water exceeded 100 fecal coliforms per 100 ml. sixty percent (60%) of the time, and exceeded 400 more than twenty percent (20%) of the time.

I attribute the extreme variability along the eastern beaches, at least in part, to the combined sewer outfalls.

Recommendation:

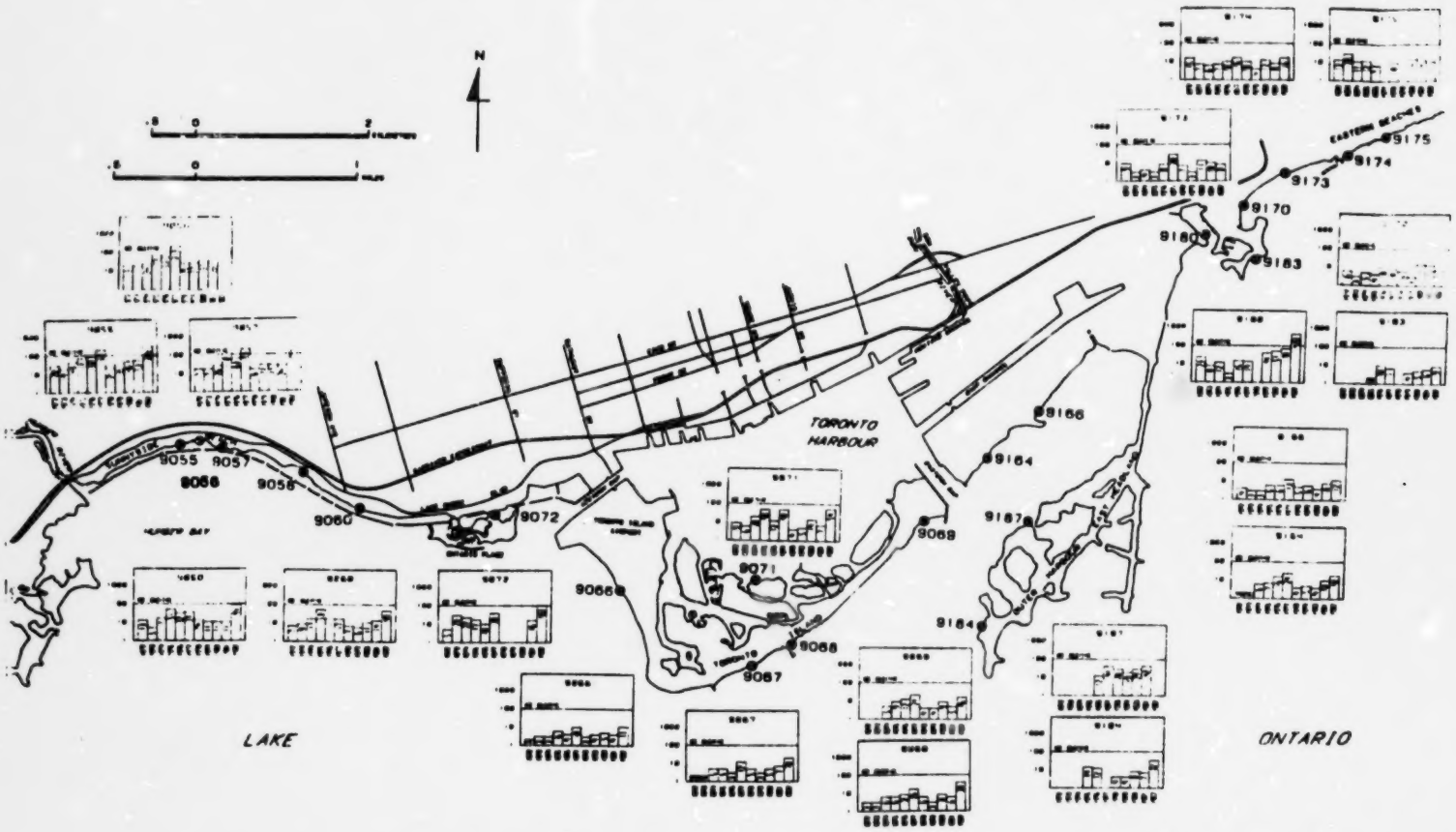
That the Metro Works Committee - Water Quality Subcommittee receive this report for information.

A.S. Macpherson, M.D., M.Sc.
Medical Officer of Health

ASM:sa
Attach.

c.c. Local Board of Health ✓

FIGURE 1



FECAL COLIFORM (CNTS/100 ML) TRENDS ALONG THE TORONTO WATERFRONT

FIGURE 2

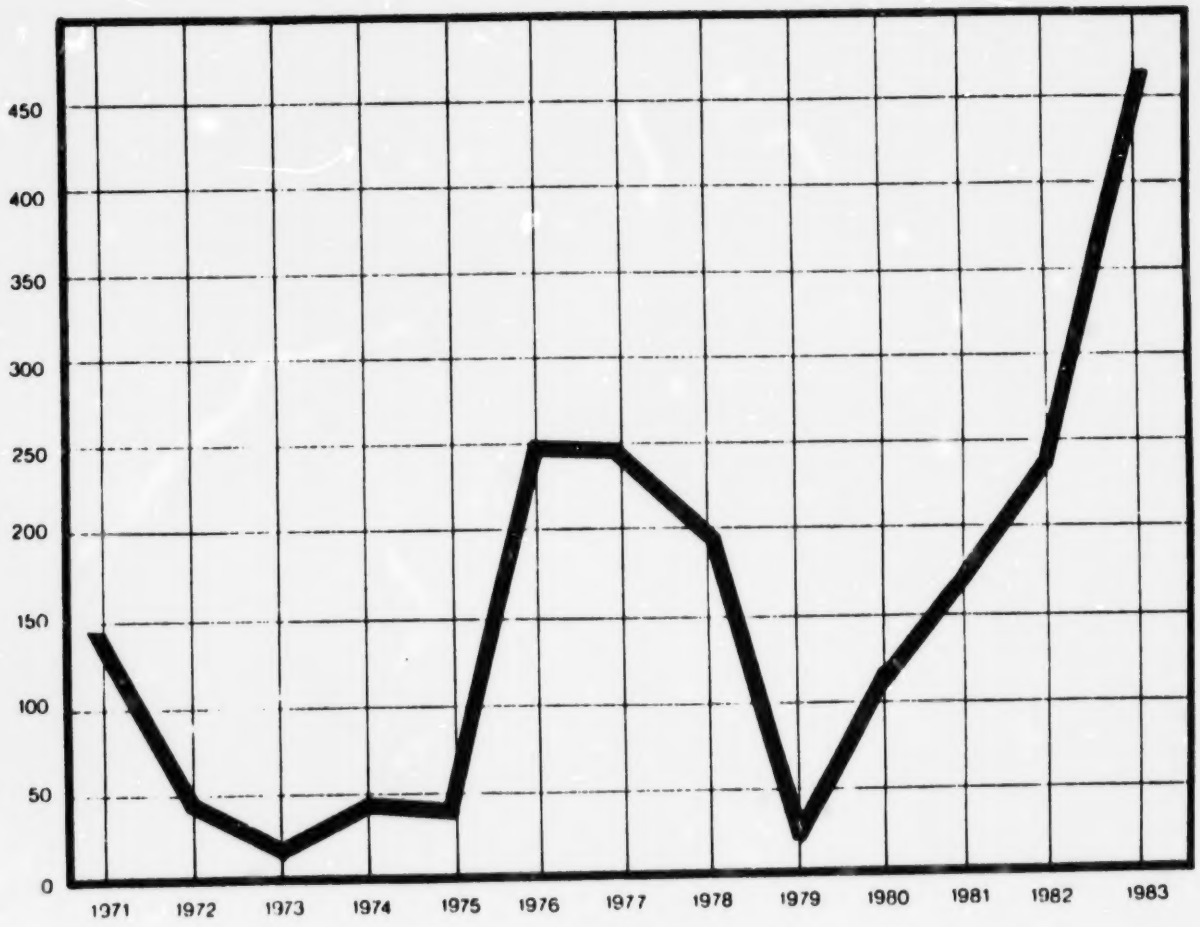
Boat Sampling

Sunnyside

supervised area inside breakwater

August values

Geometric mean fecal coliforms



SURE 3

Boat Sampling

Ontario Place

inside main waterway

August values
Geometric mean fecal coliforms

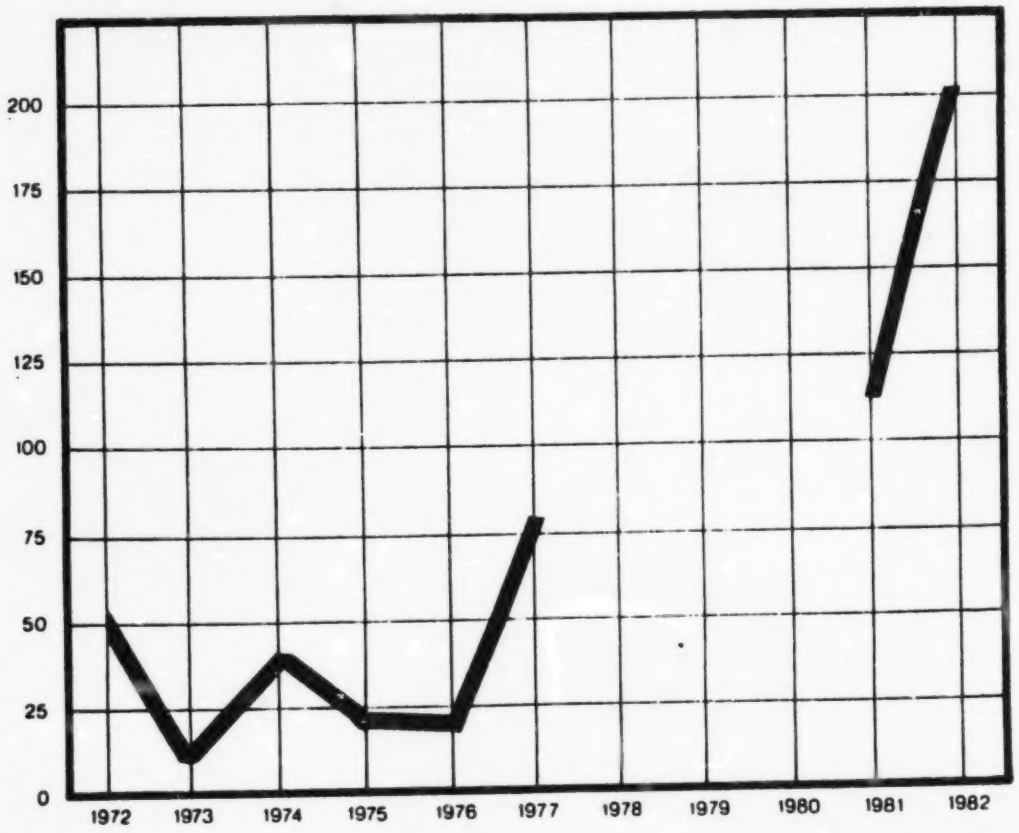


TABLE 1

SHORELINE SAMPLING

DAILY RESULTS FECAL COLIFORM COUNTS

		JULY 26	JULY 28	JULY 30	JULY 31	AUG. 1	G.M.
WOODBINE	9194	650	60	70	380	990	252.53
KEW W.	9195	45	255	270	215	565	206.59
KEW E.	9196	120	355	160	3,000	3,900	603.03
KEW E.	9196B	200	20	120	580	180	138.03

7/11/83.

TABLE 2

SHORELINE SAMPLING

DAILY RESULTS FECAL COLIFORM COUNTS

15' OFF SHORE

		JULY 31	AUG. 1	AUG. 2	AUG. 3	AUG. 4	G.M.
WOODBINE	9194A	660	860	90	10		150.339
WOODBINE	9194B	360	1,200	80	10		136.35
WOODBINE	9194C	630	2,300	30	120		268.75
WOODBINE	9194D	2,000	700	60	20		202.46

7/11/83.

TABLE 3

WADE-IN SAMPLING

FECAL COLIFORM DAILY COUNTS

1-1.5 M DEPTH

		AUG. 4	AUG. 5	AUG. 7	AUG. 9	AUG. 12	5-DAY GEOMETRIC MEANS
9194	(WOODBINE)	40	36	206	388	290	127.26
9196 A	(BALMY WAVERLEY)	256	72	64	460	400	185.061
9196 E	(BALMY SILVER BIRCH)	3,300	164	4	240	290	172.03

		AUG. 15	AUG. 18	AUG. 22	AUG. 25	SEPT. 1	10-DAY GEOMETRIC MEANS
9194	(WOODBINE)	<5	20	3,100	260	72	106.8
9196 A	(BALMY WAVERLEY)	15	28	3,000	330	336	177.1
9196 E	(BALMY SILVER BIRCH)	<5	8	3,000	100	464	123.7